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DIVIDEND NOTICES.

THE AMERICAN TOBACCO COMPANY
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New York, August 2, 1916.
A dividend of 5 per cent has been declared upon the common stock of The American Tobacco Company, payable September 1, 1916, to stockholders of record at the close of business August 25, 1916. Checks will be mailed.
J. M. W. HICKS, Treasurer.

MEETINGS.

QUARTERLY MEETING of the American Institute
Thursday, Aug. 3, 1916, at 2:30, West 23d St.,
820 P. M. C. E. SCHAFFNER, Secy.

BRITISH MAKE NEW DEMANDS

Must Know Names of the Firms and Persons for Whom Bankers Act.

Great Britain, in her effort to prevent trading with "enemy" subjects and with persons having "enemy" affiliations, has not stopped with the publication of the blacklist of American business concerns. It was learned yesterday that within the last fortnight the leading New York banking institutions have received word from their London bank correspondents that henceforth the names of all individuals or firms for whom the banks are acting in making sterling remittances to London must be known. This has been done at the order of the British Treasury. It means that all dealings in sterling exchange in this market have come under the surveillance of the British government.

The purpose of the new order, according to bankers here, is to prevent any of the blacklisted firms from doing business indirectly with London, through their connections with American banks not under the ban. During the long period of months when the "unwritten" blacklist was in force it was not particularly difficult for blacklisted firms to transact their London business through the medium of New York banks. This has also been done in a small way since the publication of the blacklist, but the new order is expected to shut these firms completely off from business relations with London. Bankers talked of the new order yesterday in a matter of course way. They seemed to think it a natural development.

France, it seems, is copying out of the British book. French bankers, too, are working to hinder the operations of enemy subjects here as well as elsewhere. New York bankers in several instances have, during the last week, been asked to pledge their personal word of honor that certain important transactions negotiated by them for the account of the French would in no way benefit interests friendly to the German cause.

FINANCE AND ECONOMICS

GARET GARRETT, Editor.

WALL STREET OFFICE:
Mills Building, 15 Broad St.Telephone:
Hanover 6514.

Significant Relations.

Money and Prices:		Now.	A year ago.
Stock of money gold in the country.....	June 30.	\$2,439,921,932	\$1,993,549,015
Loans of all national banks.....	June 30.	\$7,606,000,000	\$6,659,971,000
Ratio of their cash to deposits.....	June 30.	9.6%	11.9%
Loans of Federal Reserve Banks.....	July 1.	\$11,018,000	\$10,727,000
Their note circulation, net.....	July 1.	10,122,000	14,965,000
Their gold reserve against deposits and circulation.....	July 1.	66.9%	84.8%

Average price of fifteen railroad stocks.....		Yesterday.	The day before.	A year ago.
Average price of twelve industrial stocks.....		91.83	91.53	105.92
Food cost of living (Annals index number).....		168.61	169.9	145.36

Production:		June.	May.	A year ago.
Unfilled U. S. steel orders, tons.....	Latest government forecast.	9,610,458	9,937,798	4,678,196
Wheat crop, bushels.....	Latest government forecast.	759,000,000	1,012,000,000	
Corn crop, bushels.....	Latest government forecast.	2,846,000,000	3,055,000,000	
Cotton crop, bales.....	Latest government forecast.	12,916,000	11,191,820	

Distribution:		July.	June.	A year ago.
Surplus freight cars.....	Latest government forecast.	52,116	55,244	275,111
Gross railroad earnings.....	Latest government forecast.	16.4%	18.8%	23.4%

Bank clearings.....		Last week.	The week before.	The year ago.
		+31.2%	+40.4%	+42.8%

Thursday, August 3, 1916.

Wednesday, August 2, 1916.
This was a day for the stock market to be dull and weak. The day before it was dull and strong. The movements are irrelevant and unimportant. When prices rise it is surprising that they rise so easily on so little buying, and it is said, "There are no stocks." When they fall it is thought ominous that they fall so easily, and it is said, "The market is full of stocks." The details are magnified, and the outlines are lost. Motor stocks were weak, Bethlehem Steel declined 4 1/2 points, Union Pacific lost half of the preceding day's rise, somebody sold more Industrial Alcohol than was wanted at the price of the day before, and the market was generally weak.

Probably never before were there so many stocks, old and new, in the possession of Wall Street undigested. The supply of the old has been enormously increased by foreign liquidation, and that of the new has been enlarged by new flotations. And yet there is a more or less constant illusion of scarcity. That is owing very largely to the fact that for a speculator it is cheaper to buy than to sell. Money with which to carry stocks is very cheap. A great many securities, even after the rise that has taken place, more than carry themselves by their dividends. It is the rule. That is to say, one who borrows money at bank with which to buy stocks on margin may receive more from the stocks in the form of dividends than he pays for the money. The seller, on the other hand, is out of pocket in corresponding measure. If he borrows stocks to sell them for a fall he has to pay the dividends to their owners, and the dividends paid by the borrower of stocks to the owner of them may be more than the interest which the owner of the stocks pays the borrower to carry them. The actual owners of stocks do not sell them, either. Why should they?

Good and bad wheat years seem to alternate by some unknown law of rhythm, and, as a rule, a good one is good and a bad one is bad all over the world. Last year was very good and this country produced a crop never before matched. At the same time, the world's production was about 15 per cent above that of the preceding year. But for this fact, the "war price" of wheat would have been much higher. Now is the poor year. We have lost somewhere between one-third and two-fifths of the spring wheat crop, which last year was of the prodigious size of 357,000,000 bushels. Its five-year average (1910-1914), however, was only 233,000,000 bushels. The winter wheat crop is already made. It is much smaller than last year, and yet compares favorably with the average annual production of the last five-year period. From last year's combined winter and spring wheat crops there is a large carry-over, which, added to the reduced production of this year, will supply domestic consumption and leave a considerable balance for export. The world's demand for it is likely to be very keen, for the yield as compared with last year has fallen elsewhere—in Canada and in all of Europe. Even in Argentina the conditions are unfavorable. Australia alone appears to have been exceptionally favored. She is producing a very large crop. In Russia there are enormous stocks, accumulated since the beginning of the war, when the Dardanelles were closed. There is so much uncut and unsold wheat in Russia, in fact, that the acreage put to this year's crop declined about 25 per cent.

The National Association of Credit Men, in a letter to members, says: There are at present signs that we are reaching the crest, that there have been anticipations of future needs that have caused some overstocking or overcommitments, and while there are no grounds for pessimism, there are reasons for sounding right now a note of caution. We recommend earnestly upon the credit men of the nation a careful clearance of

the rapid transit industry. It should be run for its patrons, its owners and its employees, among whom only terms of fair division will endure. It is always possible that the public, which is so often called in to judge, has itself been taking too much. It may have bought garments for less than they were worth, so that the workers received less than a fair division. In the case of the railroads, it may have been enjoying and wasting transportation at a price which would not fairly compensate both capital and labor.

WEST OF EAST

Science Washing Linen in a Research Laboratory.

Pioneer Work in Economic Chemistry at Mellon Institute.

Pittsburgh, July 28.

Even technology may have its vogue. "Not the least of Pittsburgh's wonderful achievements," says the widely flung ten-sheet poster, "is Tech Beer. It typifies technical advancement." This is not so incongruous as you think. Beer is an article of commerce, and, therefore, a proper subject of technological interest. Brewer, laker, dyer, or whatever you say, if you have a chemical problem on your hands, you take it to the Mellon Institute of Industrial Research, adjacent to the University of Pittsburgh, and leave it. You need only to buy a fellowship and then exercise a little patience. In time your problem will be solved and the formula delivered. It is yours. Buying a fellowship means that you contribute a certain sum of money—several thousand dollars—which will be used to pay the wages of the trained and specialized chemist appointed by the faculty to conduct the research. The institute picks the very best man it can find for your particular job, provides him with a laboratory and gives him access to a large store of accumulated knowledge.

There are now more than forty-five fellowships, each with its own laboratory and its own problem to solve. One is the fellowship of a baking concern that wants a formula for perfect bread. In that laboratory a chemist does nothing day after day but bake wheat loaves, changing the formula each time a little, intending to exhaust all the possible combinations. He has not found the perfect formula, but he will.

In the next laboratory another chemist is treating phosphorus rock in a small revolving furnace. His job is to obtain "artificial manure," that is, chemical fertilizer, by a formula that will make its production commercially feasible. When he thinks he has it he will test the process in a furnace twice as large, and then in one of commercial size very much larger. If it succeeds there it is then ready for the manufacturer. The problem is solved.

Linoleum, Varnish and Candy. At the door of the next laboratory one stumbles over a heap of linoleum scraps. This is not untidiness. Inside is a chemist whose mind is inclined to the problem of a linoleum maker who thinks he could make a fortune with a product that would neither stretch nor shrink, and so he could, and will, if the chemist hits upon the right things in this right combination to make linoleum lie as flat and still as a Turkish rug.

The man next door is at work on dental cement. Another is experimenting with chewing gum. Another has just found the final illusion of black in varnish, and that will hurt the feelings of the Germans. You pass in succession the doors of such fellowships as that of a candymaker, that of a paint manufacturer and that of the miller who has not yet despaired of finding higher commercial uses for the waste products of flour making, and come to a door where every one is very polite but not overwhelmingly hospitable. It is hardly proper to ask questions. Here acetylene gas has been produced by a new process, and the patents have not yet been obtained.

A next door is a very communicative man, a chemist, too, but he runs a miniature steam laundry, washer, centrifugal wringer and all; and he asks you why you wear French cuffs. To even off, you ask him why a chemist runs a laundry, and he tells you. His fellowship belongs to a laundryman who wants to know for sure if there is anything in the complaint that clothes steam laundered go to pieces faster than clothes washed by hand. So here is a chemist, in the Mellon Institute of Industrial Research, keeping an elaborate and scientific record of the progressive disintegration of several sets of linen handkerchiefs, one set washed by a negro woman, one by a steam laundry and one in his own laundry.

Next to him is a man experimenting with cases in their organic synthesis. Further on is one who, and he would, could rest a long time on what he has done. He has found a formula for producing aspirin, which ought to make the owner of his fellowship indifferent to German competition for all time. He thinks it will, for he is investing his money in a plant to employ this young chemist's process commercially.

Fixation of Knowledge. At the end of the hall are some doors that do not stand open. You could look in, perhaps, but there would be nothing to see but laboratory apparatus, and nothing to talk

about that you could hope to understand. "This," says the director, "is the department of pure chemistry." Elsewhere existing chemical knowledge is being applied to practical problems. Here in the department of pure chemistry, which is supported entirely by the institute, the work is to torture the elements until they give up new secrets. There is no definite problem. This is research for its own sake. The results go into the stock of reserve knowledge, which the practical researchers draw upon at their leisure.

"Scientific research," says Dr. Raymond F. Bacon, "conducted in the laboratory is the soul of industrial prosperity." The words are metaphysical. The meaning is practical. This country is far behind some others, especially Germany, in economic chemistry. Only since the war have people begun to perceive its importance. It is something new to say in popular discourse that the industrial progress of a people can be measured by their consumption of sulphuric acid, which is the basic chemical; but this has been an axiom for many years in the laboratory. Understanding is yet imperfect of the fact that a country is not self-contained, agriculturally, economically, or, in the large sense, politically, unless it has enormous facilities for the fixation of nitrogen and can obtain unlimited quantities of nitric acid and its salts from the atmosphere. "The great adaptability of certain parts of our country to electro-chemical manufacturing," says Dr. Bacon, "on account of the water power available, may soon introduce this air fertilizer industry." It ought now to be flourishing.

Attitudes. The attitude of American industry toward chemical research has been one of immediate expediency. Problems have been solved only as they have arisen, upon the incentive of necessity; few have been anticipated. The future is expected to take care of itself. Therefore, there does not exist any great accumulation of reserve knowledge to be drawn upon in emergencies or to form the plans and undertakings that might be conceived in a spirit of providence. If such a body of knowledge had existed many of the problems suddenly created by the war would have been much easier and more quickly solved.

Problems which now may be clearly foreseen are disregarded because they are too far away. There is, for instance, only one coal company in the Pennsylvania region that has intelligently considered ways and means to meet the progressive exhaustion of existing fuel supplies. The corporations that are reinvesting in chemical research more than an infinitesimal portion of their profits can be counted on the fingers. After you have named the General Electric, the General Chemical, the Eastman Kodak, the United States Steel and the du Pont Powder companies, the list narrows off suddenly to corporations maintaining small research laboratories at an expense of a few thousand dollars a year, and of these there are perhaps fewer than 200 in all this country.

The Inspiration. These facts throw the work of the Mellon Institute into high relief. There are thousands of manufacturers in Pittsburgh who do not know of its existence, or who, having heard of it, were not sufficiently interested to remember. It did not originate in Pittsburgh. It was begun as recently as 1907 in the University of Kansas, by Dr. Robert Kennedy Duncan, who, while attending the Sixth International Congress of Applied Chemistry, in Rome, the year before, was so impressed by the results obtained in Europe from the co-operation of science and industry that he returned home with an idea of bringing about similar co-operation in this country. He took the chair of industrial chemistry in the Kansas University and established there an industrial fellowship scheme, whereby a manufacturer could very simply and cheaply endow intensive chemical research in his own exclusive behalf and immediately appropriate the results. I succeeded in Kansas, but the work was handicapped by its distance from the region of great industrial activity, and in 1911 Dr. Duncan transferred it to Pittsburgh. Hence the Mellon Institute. A baking company that desired to improve its product was the first to buy a fellowship—a baking company in the greatest steel producing region of the world the first to avail itself of this opportunity to command industrial chemical research!

The American manufacturer's habit has been to think that new and improved processes would somehow evolve themselves and be for sale when, if and as needed, like any other merchandise, or like a new machine, which, so long as it does not exist, can not be missed, but which, when introduced, has to be adopted to keep up with competition, though it involves scrapping all the old equipment. The idea of putting money into experimental laboratory work as a business investment purely for the purpose of finding new processes is still strange to him. It is like hiring a mechanical genius to invent something, instead of waiting for the inventor to produce a result on his own time and risk and then buying it from him. G. G.

DESTINY LIES IN OUR OWN HANDS

A Little Lecture to the Sister Anne of Commercial Life.

By ARCHER WALL DOUGLAS.

St. Louis, July 31.

No one can deny that as a nation we are enamored of prosperity. Not alone because of the mere getting of dollars and the things of ease and comfort which these dollars imply, but equally because of that opportunity for the expression of our powers which prosperity alone can give. Democracy is essentially a system of action, of tireless strivings and of noble discontent. That is why the elemental and undeveloped West is so rife with the spirit of militant democracy. That is why prosperity is the shibboleth of our social, economic and especially our political life. In our hearts we all know full well that neither nations nor individuals ever learn lessons of enduring value save through stress and trouble. Yet, nevertheless, we all go like snails most unwillingly to the school of adversity.

So it is that the Sister Anne of Commercial Life, sitting upon the housetop of expectancy, asks whether the dust clouds upon the horizon telling of the coming of peace in Europe forecast the ending of that prosperity of which we are now tasting the fullness and for which we have been hungering and thirsting all these weary years. Prophecy is much like unto the job of self-deception described by Koko in "The Mikado," as being "an exceedingly delicate and difficult not to say dangerous, operation." Yet there are some logical factors in the commercial history of a nation that make two and two, as the Thinking Machine said, "not sometimes, but all the time" "One of these is the possession of certain resources, and such our country has in full measure, pressed down and running over. You may get a glimmering of them by reading government documents, railroad folders, emigration prospectuses and real estate advertisements.

For Eyes to See. A daylight trip through most any part of the United States, save the forbidding and inhospitable desert, will visualize them in a most vivid manner, and will reveal an untold wealth of agricultural productions, of lumber, mines and water power, such as no string of statistics can convey. Let two examples suffice: There are to-day in this country over 70,000,000 acres of swamp lands, which are fast being drained and transformed into wealth producing fields. In extent they are about two-thirds the total acreage devoted to corn each year. In 1915 the corn crop was 3,000,000,000 bushels. If any one had started at the beginning of the Christian era to count this crop at the rate of one bushel a minute he would still need ten thousand years to complete the job. Or if the crop was loaded in freight cars and these cars stood end to end they would reach one and one-half times around the world. Yet this fabulous wealth, whose money value at 50 cents a bushel would more than wipe out our national debt, is produced annually from the elements of the earth and air that were practically valueless to us until so transformed.

Then the Spirit. But there is another requisite for prosperity greater even than material resources, and that is the spirit of the people. There are tropical countries where nature does everything and man does nothing, so they are always wretchedly poor, and prosperity is a stranger to them. There are states in the Southwest whose resources are boundless, but whose people are so devoted to the past that they are content with their lot. So their commonwealths were laggards in progress, and life in the countryside was a thing of uneventful monotony. But it is no longer true, for throughout the West there is the spirit of the future, the spirit of local pride and ambition which is the saving grace of the situation. Hamlets in the Ozarks, far from railroad, feel the impulse of the master of the universe, and of other things of amusement and pleasure, of art and culture, of intellect and knowledge which make life worth while. Naturally, matters of physical comfort and acquisition, of education, it is a backward and an unenterprising town now that has not waterworks and an electric light plant and concrete sidewalks, or a public library, or an "opera house" for the occasional strolling troupe or the ever present movie. The most insistent demand to-day in rural Missouri is for good roads and better schools, for there are the best tokens of an advancing civilization. Schools mean the possibility of democratic government, for without them there can be no such thing.

Psychic Value of Roads. Good roads signify more than cheap transportation and the ease of bringing farm products to market, for they are the sole possible solution of that great problem of our day, the binding of the small town and the farm in close economic and social bonds. The evil of farm life was its loneliness and its dreary monotony of unceasing labor—while the existence of the small town was a stagnant and untroubled life. Good roads and automobiles have altered the face of the country, and made possible that constant intercommunication of ideas which is the knell of provincialism, of narrowness and of prejudice. Two recent incidents tell of the working of the little leaven that is leaving the whole mass. In June of this year there was a great good news meeting at Springfield, Mo., to determine the route of the Ozark Trail, a part of the coming great transcontinental route from the East to the West. The city was overrun with delegates from Arkansas, Kansas, Oklahoma and Missouri, each delegation clamoring for the right of way through its own locality. Down the street, headed by a band, marched two hundred men with "Cubol" in golden letters on their white caps. New "Kabuls" may be the capital of Afghanistan, but it is also a little town in the Ozarks, some miles from any railroad, and of 1,200 inhabitants, who sent one-sixth of their number to demand that the Ozark Trail go through their hamlet because Cubol had the best of all arguments, good roads already built. So, one by one, every one of the 114 counties of Missouri is coming into line with an election to issue bonds that it may have good roads without stint.

Comparing the two years, America shipping tripled and European clearances decreased. The American tonnage to South America was 950,000, nearly five times greater, and to Europe 1,100,000, two and a half times greater.

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WHAT RUST HAS DONE TO WHEAT

A Description of the Blight and the Consequences of This Visit.

Minneapolis, Aug. 1.

The first genuine black rust visitation for twelve years has caused all this worry and excitement. Now that it is all over except the counting of the bushels, there is absolute certainty about general results. The Northwest will get a wheat crop, but it will be small. It started out with good promise. No one can put the damage into bushels or percentage figures at this time with any certainty of being correct. But the crop has been hard hit and probably has been cut, possibly by 35 to 40 per cent.

The winter wheat farmer, who lives in the corn country, who plants his winter wheat in the fall and gets it cut and stacked early the next year, did well. He is a real risk taker. He plants his seed in the spring, finds it standing in position to get a hard knock when "corn weather," which means hot weather, comes along in July. He is a real risk taker. This year extreme heat caught some of the spring wheat in the delicate stage and blighted it. Then along came rust.

Never a season comes and goes without a rust visitation. It shows up in some of the fields. Eleven times to one time the crop matures without sufficient damage having been done to lower the total yield materially. In 1914 there was a bad rust damage season. The crop was cut away down. Not until this year has it repeated.

The Worst Is Known. The worst now is known. The Northwest has accepted the fact that a big crop prospect has been lowered to a promise of a near average crop. This will not have the effect that might be imagined. Of course it is a bad development. But the Northwest is so rich, after several successive seasons of good crops and good prices, followed by a year of low prices, that the fact that extensions of credit have been made in some localities, it will not affect business materially. It is just a setback in the earnings of the railroads. That, perhaps, is the most important effect.

If what has just happened had happened twenty years ago, or even ten years ago, it would have been a real disaster. It would have meant that his life out here, it cannot have that effect now.

Rust When You See It. Black rust, when it is getting in its work, looks on the wheat stalk much as if one should take a straw out of his lemonade glass, wet it and then shake coarse pepper on it. One goes into a field of wheat that looks good on top. The heads perhaps have formed, but are not yet ripe. They will turn out to be "in the milk," and are very soft. In the second stage they are "in the dough," and have filled, but not yet hardened. If one finds the little black pepper spots on the stalk, it is then a question of a race between the wheat and the rust. Given cool, favorable weather, just the right kind of good weather, the wheat will be able to outgrow the rust, and fields of wheat with black rust all over the stems have yielded well in past seasons, and have matured well. But, if "muggy" weather comes, it is not the wheat, but the stalks will soon be punctured by the parasites. That means nothing in the heads. Let the temperature be high, say 90, in South Dakota. Let a shower come, and the wheat will be saved. On, rust being present in some fields, on the stalks comes out from the fields stem, rust will spread with great rapidity. A farmer unfamiliar with the rust sometimes will see the hot shower, and when he sees the hot sun out and the vapor hanging over the fields, will not know that the rust is going through his wheat. Of course, if there is rust in his vicinity, and he is alarmed about it, he will realize that his field is in a critical period.

Obliging the Corn Crop. Now that it is all over, the business people here are taking it very calmly. New York financial interests whose investments extend this way may be assured the effect will not be severe. Wheat is the predominant crop in the West. Wheat is the crop by which the production of the West is gauged. Yet corn is the biggest crop in the world, and the kind of weather that has adversely affected the wheat has just as adversely affected the corn crop. Weather that will cook the berries on a bush, bake peas in a pot, dry up ponds and streams, will make people go about with half their clothes off, and the kind of weather that will make a corn stalk lean out of the ground and grow like a beautiful, big sunflower.

JAMES E. NEVILLE.

SHIPPING RECORDS BROKEN

25,500,000 Tons Cleared from American Ports in Year.

Washington, Aug. 2.—Merchant shipping cleared from ports of the United States in the year ending June 30 set a new record, notwithstanding the Allied blockade, the closing of the Black Sea and the withdrawal of German and Austrian merchant ships from trade. Bureau of Navigation reports made public today show the tonnage cleared was 25,500,000, of which the United States and 21,600,000 was foreign.